

AMENDMENTS TO THE SPECIFICATION

On page 19, last paragraph, continuing to onto page 20, please amend as follows:

Fig. 14A illustrates an exemplary remainder space ~~(RS)~~ 1500 for a preliminary H_{total} value in accordance with an embodiment of the invention. Accordingly, the remainder space RS 1500 is most conveniently displayed as a circle equally divided into ~~ten~~ a number of segments ~~1502—1520~~ each of which corresponds to a range of remainder values. For this example, each segment represents a range of remainder values of 0.10. For example, the segment 1502 represents that portion of the remainder space RS 1500 that corresponds to a range of remainder values of approximately 0.0 to 0.1, whereas a segment 1504 corresponds to a range of remainder values of approximately 0.1 to 0.2, and so on. It is important to note that since at this point in the analysis, the phase has not been determined, that the entire set of calculated remainder values will essentially be rotated by a phase angle \emptyset . The phase angle represents the unknown difference between the true phase angle (to be determined) and the actual phase being used to calculate the positions of the pixels at this point in the analysis.

On page 20, Second paragraph, please amend as follows:

In order to predict the horizontal resolution, therefore, at, for example, the first preliminary H_{total1} , a pixel from each of the found features is selected. Once selected, the range of predicted co-ordinates is calculated using Eq. (2) for a range of preliminary H_{total1} values and plotted in the remainder space RS 1500 as shown for each of the found figures. This process is repeated for a range of preliminary H_{total} values in such a way that a particular remainder space is associated with a particular preliminary H_{total} value as illustrated in Fig. 14B showing a remainder space 1550 associated with the second preliminary H_{total} value H_{total2} . After all the found figures have been evaluated, the associated remainder spaces are compared to one

another in order to determine a largest gap value β . It should be noted that the gap value β is directly related to the degree of randomness of the observed remainder values for the set of features tested at each preliminary H_{total} . By selecting the largest gap value β , the degree of randomness is minimized for that particular range of H_{total} values since the spread of calculated remainders is commensurably reduced. In this way, the preliminary H_{total} value having the smallest degree of remainder randomness (i.e., the largest gap value β) is that particular one of the range of preliminary H_{total} values that is closest to the true H_{total} value. This is analogous to selecting a minimum transition zone described above.